DOCUMENT RESUME

ED 117 616 CG 010 321

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TITLE Positive Attentional Cues as Cognitive Factors in Desensitization.
PUB DATE 1 May 75
NOTE 15p.; Paper presented at the Annual Meeting of the Midwest Association of Behavioral Analysis (1st, Chicago, Illinois, May 1, 1975)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS *Attention Control; *Behavior Change; Cognitive Processes; *Conditioning; *Desensitization; *Fear; Psychological Studies

ABSTRACT

The purpose of this study was to investigate the function of positive attentional cues as cognitive factors in the modification of fear responses in a desensitization-like treatment procedure. Positive attentional cues are defined as positively-valenced descriptors of the feared stimulus. Two groups of two subjects each were assessed as to the intensity of their fear responses (snake phobia) along behavioral and cognitive dimensions. After two relaxation sessions, the standard treatment and experimental groups received the same desensitization treatment with one exception: the hierarchy of the experimental group was supplemented with a positive attentional cue. The results indicated that while both groups improved on the behavioral measures, the experimental group's improvement was somewhat greater. Follow-up data indicated that the experimental group lost some of their initial gains while the control group continued to improve. The implications of these findings are discussed. (Author)

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ED117616

POSITIVE ATTENTIONAL CUES AS COGNITIVE FACTORS IN DESENSITIZATION[1]

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1. Originally presented at the first Annual Meeting of the Midwest Association of Behavior Analysis, Chicago, May 1, 1975.

2. The authors wish to express their thanks to N. J. Martin, J. Taylor, and J. K. Ostein for their assistance in conducting the study.

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CG 010 321

Positive Attentional Cues as Cognitive Factors in Desensitization

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ABSTRACT

The purpose of the study was to investigate the function of positive attentional cues as cognitive factors in the modification of fear responses in a desensitization-like treatment procedure. In this study, positive attentional cues were defined as positively-valenced descriptors of the feared stimulus. Two groups of two Ss each were assessed as to the intensity of their fear responses along behavioral and cognitive dimensions. The behavioral measure consisted of a two-part Behavioral Approach Test (BAT) in which a fear thermometer was used to rate the S's level of anxiety. The S was requested to (1) approach and touch the feared animal, and (2) enter a small room with the feared animal and close the door. An Opinion Scale (OS) which assessed the S's reaction to positive and negative characteristics of the fear stimulus, an Anxiety Rating Scale (ARS), and a SUDs ranking scale derived from the hierarchy provided indices of cognitive response to the fear stimulus. After two relaxation sessions, the standard treatment group (ST) and the experimental group (PT) received the same desensitization treatment with one exception: the hierarchy of the PT group was supplemented with the inclusion of a positive attentional cue. Results generally indicated that while both groups improved, the PT group made somewhat greater improvement on the behavioral measures; however, follow-up data after twelve weeks revealed that the PT group lost some of their initial gains while the ST group had continued to improve. Since

the PT subjects generally manifested improvement on the approach and SUDs measures, it appears that the addition of positive attentional cues to the standard hierarchy may facilitate behavioral change, at least in a rapid and intensive treatment program. The measures of cognitive change do not appear to have been sufficiently powerful to detect positive change if, in fact, such change did occur. Of course, it is also possible that cognitive change did not occur and that this was accurately reflected. More refined instrumentation, such as the use of a semantic differential, is indicated for further experimentation.

Introduction

Behavior therapists have generally viewed their techniques as limited to the modification of pathological behavior disorders which are, by definition, publicly observable and therefore measurable. However, Lazarus (1971a, 1971b) has argued that behavior therapists must also consider the cognitive components of pathology, necessarily covert operations. Others, including Beck (1970a), Bergin (1970), and Nawas (1970), have recognized the relevance of issues concerning cognitive modification in behavior therapy. Most recently, Mahoney (1974a, 1974b) has challenged behavior therapists to reconsider their stance toward congitive behavior approaches. Thus, it appears that behavior therapists are beginning to deal with the possibility of including cognitive techniques in their therapeutic repertoire.

In recognition of the potential of cognitive modification techniques in behavior therapy, the objective of the study was to investigate some of the cognitive components involved in desensitization.

Background. Although the research data are mixed, Lang (1969), after reviewing the literature, reported that "Research does provide clear evidence that cognitive set can attenuate verbal and somatic components of fear behavior" (p. 185). Approaching this issue experimentally, Beck (1970b) supported Lang's contention through an examination of the effect of fantasy on pathological functioning. Basing much of his work on the successful use of imaginal scenes

in desensitization research, he found that "Induced fantasies were helpful in delineating cognitive distortions. Structured or guided fantasies were found to facilitate more adaptive behavior" (p. 16). Furthermore, he concluded that "Modification of these cognitive patterns appeared to be responsible for therapeutic improvement" (p. 16). The cognitive modification process that he used with these fantasies was termed "cognitive restructuring".

In an attempt to distinguish the relative effects of neutral and reinforcing (positive) covert imagery with a desensitization-like strategy, Bernal et. al. (1974) shed light on the cognitive modification aspects operating in desensitization. Within this study, he was unable to detect any significant differences related to the reinforcing capabilities between the two types of covert imagery. However, in an analysis of the scene presentations by the present researchers, it was noticed that in every scene, the phobic object, a snake, was presented to the client in a very positive manner; more specifically, several positive characteristics of the snake, i.e., beauty, grace, form, and other special attributes, were emphasized in the description of the imaginal scene. The therapist had inadvertently planned the scene presentations such that the client attended to the more positive characteristics of the snake. It is hypothesized that the snake which had heretofore been identified as a "bad object" was slowly becoming associated with its more positive characteristics. In regard to these considerations, it appears that the client would have improved regardless of the added covert imagery. Thus, there exists the possibility that selective focusing on positive cues accounted for much of the overall treatment effect. This process appears to be similar to Beck's (1970b) "cognitive restructuring," since the scenes were structured such that the subjects must attend to the positive description of the snake.

Discussing the importance of attentional factors in maladaptive behavior patterns, Mahoney (1974a) contends that maladaptive attention to covert stimuli is related to maladaptive behavior. These attentional patterns, respectively termed maladaptive focusing and self-arousal, appear to serve a cueing function. Mahoney discusses self-instruction, which closely resembles Beck's "cognitive restructuring," as an appropriate therapy for these maladaptive patterns. A recueing process occurs, since the subject is taught to attend to the more positive characteristics of the phobic object; i.e., the "positive attentional cues" (PACs). Returning to Bernal's study, it now seems reasonable to further speculate that the subject's fear of snakes could have been effected by the positively-oriented scene presentations.

Few investigations of the effects of positive imagery have been attempted; however, the results appear very promising. Chappell and Stevenson (1936) used positive imagery to significantly reduce adverse symptomatology of patients with peptic ulcers. The patients were trained to imagine positive scenes each time they experienced anxiety. Using a similar technique, Lazarus, et al. (1962) utilized positive imagery involving comic book heroes to decrease the fear of darkness in young children. Finally, Hekmat and Vanian (1971) used what they termed "semantic" desensitization to successfully decrease fear of snakes by pairing the word, "snake," with positive imaginal associates. Therefore, the use of positive imagery or as termed more exactly by Mahoney, the positive attentional cue has tentatively been found effective in the reduction of anxiety.

Purpose of the study. The purpose of this study was to investigate the function of positive attentional cues as cognitive factors in the modification of fear responses in a desensitization-like treatment procedure.

Method

Subjects. A fear survey schedule listing 51 feared objects or situations rated on a 7-point scale (ranging from None to Terror) was distributed to a Michigan State University class of M.A. counseling students. As there was no single item with a large number of Terror responses, six female subjects with three feared objects (snakes, stinging insects, and dogs) were selected for this study. Ss were randomly assigned to the experimental conditions. The therapists, four doctoral candidates in counseling, were randomly assigned to treatment conditions.

Instrumentation. Three instruments and one approach test were constructed. The first of these was an Anxiety Response Scale (ARS) which listed six animals, including the three selected as treatment objects to be rated on anxiety from 1 to 10. The second measure was an Opinion Scale (OS) consisting of 30 statements (ten for each animal) to be rated on a 5-point scale from Strongly Disagree to Strongly Agree. One 10-item hierarchy was built and slightly adjusted for each animal. The Behavioral Approach Test (BAT) had two components. The subject was first asked to approach and touch the feared animal. Anxiety was rated on a ten point scale at fixed distances from the animal. The second component involved measuring subjects' willingness to enter a small room with the feared animal and close the door.

Procedure. All subjects participated in two relaxation sessions prior to treatment. However, two Ss were deleted from the study due to illness. Uniformity in training across Ss was maintained through the use of a standard 30 minute relaxation tape. (The Ss each attended two sessions where the tape was played and they discussed problems they were experiencing with relaxation.) The Ss were encouraged to practice at home twice daily.

During the third session the Ss responded to the pre-test instruments, ranked the ten hierarchy items and rated them according to Subjective Units of Discomfort (SUDS), and were rated on the Behavioral Approach Test.

Desensitization was begun at the fourth session. Each desensitization session consisted of 5-10 minutes of relaxation, 30 minutes of moving through the hierarchy, and 5-10 minutes of debriefing. One S completed the hierarchy in two sessions, while the other three completed it in three sessions.

Both groups received essentially the same standard systematic desensitization procedure. Subjects signalled when they felt relaxed and were then instructed to imagine a neutral scene of their own choosing. After the S signalled that the scene was clear, he was instructed to stop imagining the scene and to concentrate on relaxation. The first hierarchy item was then presented. If the subject felt anxious he was told to stop imagining the scene and concentrate on relaxation. He was then asked to rate his anxiety on a 10-point scale. When the hierarchy item was presented three times with no signal of anxiety, the therapist moved to the next hierarchy item.

The experimental and control groups received the same treatment except that in the case of the experimental group, the neutral hierarchy items were supplemented with positively-oriented descriptors of the feared stimulus: i.e., the PAC. These positive cues were rotated on an irregular basis such that repeated scenes were not attached to the same positive statement.

After the ten-item hierarchy was completed, the post-tests were administered in exactly the same manner as the pre-tests. Twelve weeks after the post-test Ss again responded to the ten-item hierarchy, rating the items according to the Subjective Units of Discomfort.

Results

All Ss manifested some behavioral improvement on the measures employed; see Table 1 for a summary of the data. S_1 and S_2 were in the Positive Treatment (PT) group; S_3 and S_4 were in the Standard Treatment (ST) group. Both S_1 and S_3 had the same feared object (stinging insects) in common; comparisons between them are therefore likely to be the most meaningful.

On the Behavioral Approach Test (BAT), only S_3 was unable to touch the feared object. That is, S_1 and S_2 (PT) and S_4 (ST) were able to touch the object at the end of treatment.

Because the Ss initially reported various SUDs scores, the percentage of reduction of these scores was used as a measure. The PT group yielded better results across all Ss; the contrast between S_1 and S_3 also favored PT (Figures 1 and 2).

The groups were approximately equal on the Anxiety Response Scale (ARS). The contrast between S_1 and S_3 favored the PT group; however, the contrast between S_2 and S_4 contraindicated this. Thus, whether real change occurred or was measured here is a matter of conjecture.

The Opinion Survey (OS) was employed as a measure of cognitive change. The results, although slightly favoring the PT group, are not definitive. Both the OS and the ARS showed generalization of treatment effects. From the Pre-to Post-test measures, the Positive Treatment (PT) Ss improved more than Standard Treatment (ST) Ss. Within the follow-up period, though, it appeared that the ST subjects continued to improve, while the PT subjects lost some of their initial gains.

Table 1.--Summary of Outcome Measures Across Ss.

Measure	Treatment			
	PT		ST	
	S_1	S_2	S_3	S_4
1) % Reduction SUDs				
(Pre to Post)	74.1	59.3	30.5	24.0
(Pre to Follow-up)	56.6	32.0	43.9	36.5
2) ARS--General*	-15.0	-3.0	-8.5	-10.0
Object	-7.0	-1.0	-3.5	-3.0
3) GS--General**	+2.0	+14.0	+5.0	+12.0
Object	+6.0	+4.0	+2.5	+2.0
4) BAT--In room	Yes	Yes	No	Yes
Touch	Yes	Yes	No	Yes

*Includes score for feared Object.

**Does not include score for feared Object.

Discussion

Since the subjects generally manifested improvement on the approach and SUDs measures, it appears that the inclusion of positive attentional cues in the standard desensitization hierarchy may facilitiate initial improvements in the therapeutic process, at least in a rapid and intensive treatment program; however, some of the gains over the standard desensitization approach are lost over time. Perhaps the cognitive process lost much of its power in effecting continuing change due to the absence of the reinforcing effect of the therapist after treatment. Demand factors may have been influential, especially at the post test. Other explanations of change, including the regression effect, are equally tenable at this point.

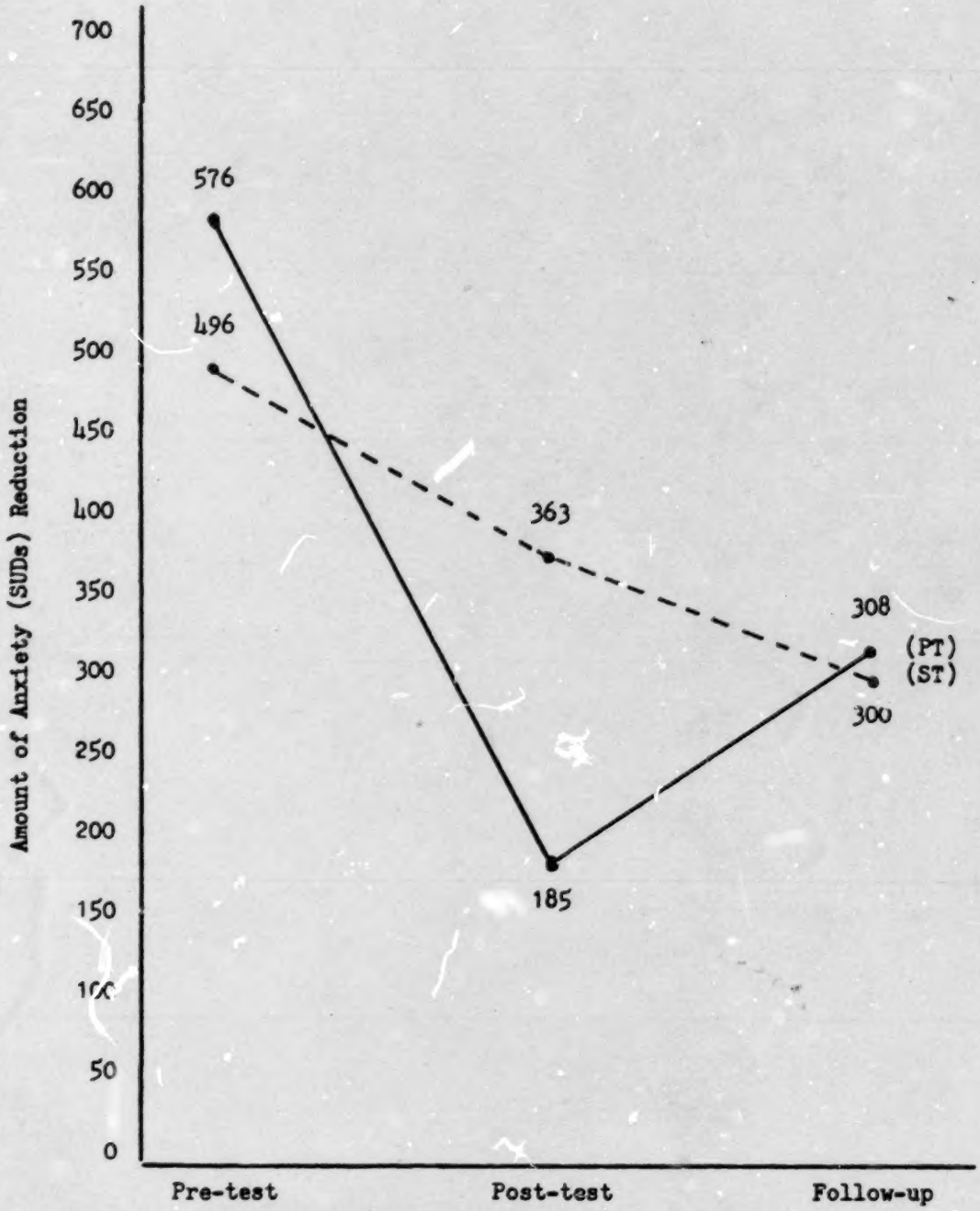

Figure 2. Amount of Anxiety (SUDs) Reduction by Treatment Group.

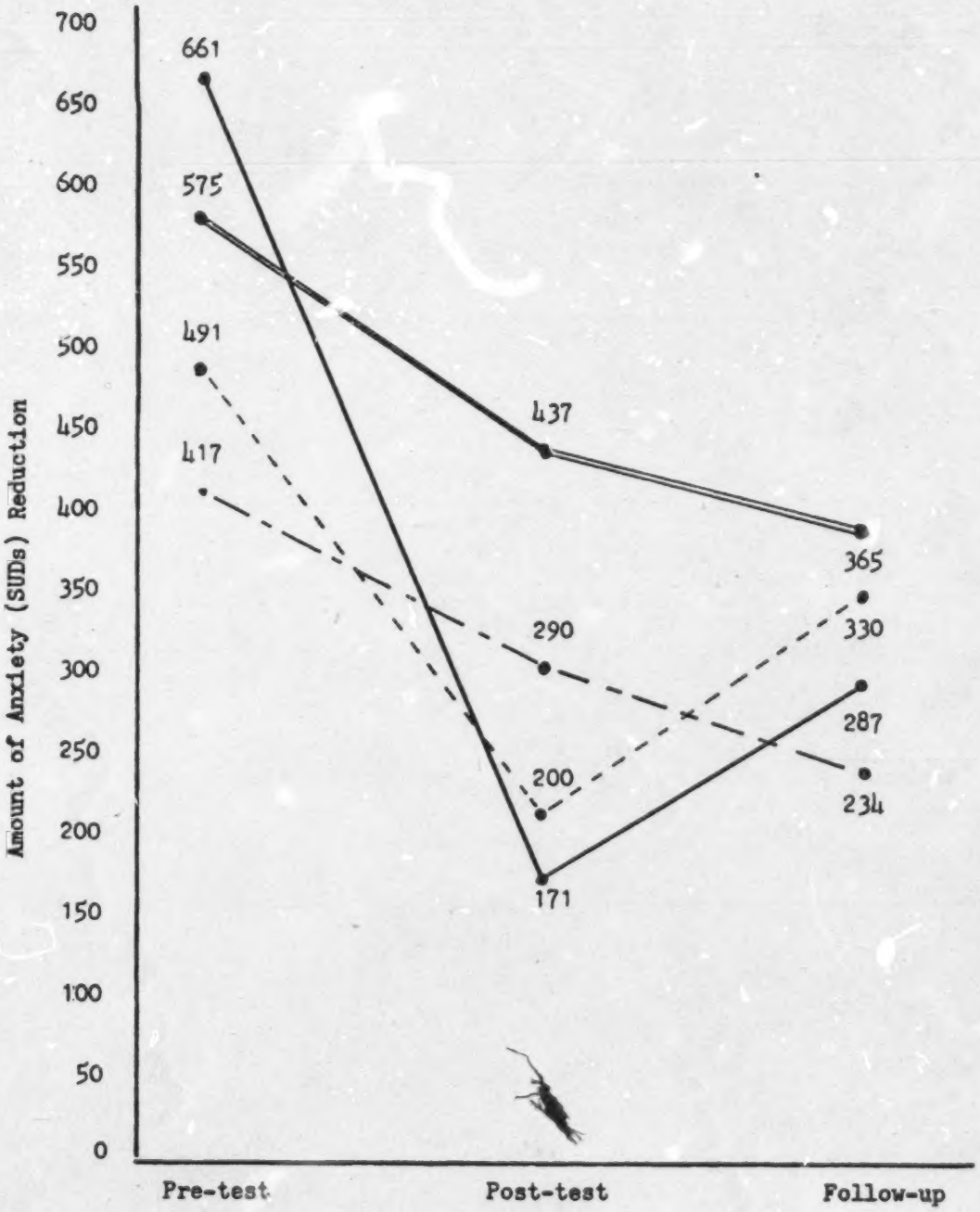

Figure 1. Amount of Anxiety (SUDs) Reduction by Subject.

The measures of cognitive change do not appear to have been sufficiently powerful if in fact such change did occur. Of course, it is also possible that cognitive change did not occur and that this was accurately reflected. More refined instrumentation, such as the use of the Semantic Differential as in the Hekmat and Vanian (1971) study, is indicated for further experimentation.

One possible confounding variable discovered after the study was completed concerns variation in item presentation. At the point where an item elicited an anxiety reaction, the therapists were not consistent in their decision to repeat a previously mastered item. The effect of this variable should have been controlled.

Although the role of positive attentional cues immediately following item presentation was investigated, placing such cues prior to the item or integrating them within the item deserves examination. Consideration of negative attentional cues might also serve to enrich the theoretical rationale for these effects. Finally, a more comprehensive design facilitating data analysis through a MANCOVA technique is now under consideration.

References

Beck, Aaron T. Cognitive therapy: Nature and relation to behavior therapy. Behavior Therapy, 1970, 1, 184-200. (a)

_____. Role of fantasies in psychotherapy and psychopathology. Journal of Nervous and Mental Diseases, 1970, 150 (1), 3-17. (b)

Bergin, A. E. Cognitive therapy to behavior therapy: Foci for a multidimensional approach to treatment. Behavior Therapy, 1970, 1, 205-212.

Bernal, Guillermo; Tennen, H. A. and Wisocki, P. A. Imaginal rehearsal or reinforcement in a covert behavioral technique: A single subject experiment. In E. B. Blanchard (Chm.), Varied behavior therapy programs. Symposium presented at the annual meeting of the Association for Advancement of Behavior Therapy, Chicago, November 1, 1974.

Chappell, M. N., and Stevenson, T. I. Group psychological training in some organic conditions. Mental Hygiene, 1936, 20, 588-597.

Hekmat, H., and Vanian, D. Behavior modification through covert semantic desentitization. Journal of Consulting and Clinical Psychology, 1971, 36, 248-251.

Lang, Peter J. The mechanics of desensitization and the laboratory study of human fear. In Cyril M. Franks (Ed.), Behavior therapy: Appraisal and status. New York: McGraw-Hill, 1969.

Lazarus, Arnold A. Reflections on behavior therapy and its development: A point of view. Behavior Therapy, 1971, 2 (3), 369-374. (a)

_____. Behavior therapy and beyond. New York: McGraw-Hill, 1971. (b)

_____, and Abramovitz, A. The use of "emotive imagery" in the treatment of children's phobias. Journal of Mental Science, 1962, 108, 191-195.

Mahoney, Michael J. Cognition and Behavior Modification. Cambridge Massachusetts: Ballinger Publishing Company, 1974. (a)

_____ (Chm.). Cognitive behavior modification. Symposium presented at the Annual meeting of the Association for Advancement of Behavior Therapy, Chicago, November 2, 1974. (b)

Nawas, M. Mike. Wherefore behavior therapy?: A critical scrutiny of three papers by Beck, Bergin, and Ullman. Behavior Therapy, 1970, 1, 359-370.